Wilderness and Environmental Medicine, **8**, 29–32 (1997)

CASE REPORT

Everest 1951: the footprints attributed to the Yeti—myth and reality

MICHAEL WARD*

Society of Apothecaries of London, Black Friars Lane, London EC4V 6EJ, UK

For centuries, mountains have given rise to legends about supernatural beings such as the Yeti of the Himalayas. The legend of the Yeti was enhanced by the finding of footprints in the Menlung Basin during the 1951 Everest reconnaissance expedition. This report provides a possible explanation of the Menlung footprints based on developmental abnormalities, physiology, and pathology of the foot.

Key words: Mt. Everest, Yeti, mountaineering, developmental foot abnormalities

Introduction

Through the centuries, mountains have been said to be the home of supernatural beings. Nymphs, satyrs, gods, and demigods have all been ascribed to the summits; and in 1708 J.J. Scheuchzër, a scientist and mountain authority, carefully classified dragons found in the European Alps.

Today, these legends live on as the Trauco of the Andes and the Yeti of the Himalaya and central Asia. The Yeti is a persistent myth that was given a great boost by the finding of footprints in the Menlung Basin during the 1951 Everest reconnaissance expedition. This was fueled by anecdotal tales from Tibet of psychic sports, warming without fire, and telepathy. Despite many expeditions and the appearance of the subject of cryptozoology, no convincing evidence of the Yeti has yet been discovered. The following provides a possible explanation for the Menlung footprints in the light of the developmental abnormalities, physiology, and pathology of the foot, which is absent from any anthropological explanation or other accounts.

Everest 1951

In autumn 1951 after the confirmation of a new route up Mt. Everest from Nepal, our party returned to Kathmandu. On the way we explored the Gaurisankar group of peaks in the Menlung Basin, 35 miles to the west because of their historical interest, as for many years they had been mistaken for Everest when seen from Kathmandu. The party split, Hillary and Riddeford examined the south side, and Shipton and I crossed a 20 000-foot pass, the Menlung La to the north. Later in 1952 this pass was the site of a scientific investigation by Dr. Griffith Pugh when he confirmed the solution made previously in 1951 at the Medical Research Council Laboratories in London, to the problem of the last thousand feet on Everest and which resulted directly in the first ascent in 1953 [1,2] (Fig. 1).

The footprints

In 1951 Sen Tensing, Shipton, and I descended from the Menlung La unroped but close together for safety over an easy gradually sloping glacier with a few narrow and obvious crevasses. In the afternoon at about 16 000–17 000 feet we came across a whole series of footprints in the snow, on the lower part of the glacier.

There seemed to be two groups, one rather indistinct in outline leading on to the surrounding snowfields. The others were much more distinct with, in places, a markedly individual imprint etched in the 2- to 4-inch covering of snow. We had no means of measuring so after examining them Shipton took four photographs: two of the indistinct prints with myself, my footprints, and rucsac beside them for comparison; the other two photographs were of one of the most detailed and distinct group of prints, with my ice axe for scale, and a second one with my booted foot. The footprint was about the same length as my boot, and I take a size 42 continental, or 8½ British, which is about 12 to 13 inches long. The print was nearly twice as broad as my boot (3 to 4 inches) and had clear-cut edges in the crystalline snow on a base of firm snow ice. There was the definite imprint of a big toe that was broader and shorter than the other rather indistinct toes, of which there seemed to be four or five (Fig. 2).

We followed these tracks for some way down the easy

*Address for correspondence: Pheasant Hill, Lurgashall, Petworth, West Sussex GU28 9EP, UK.

1080–6032 © 1997 Chapman & Hall

Fig. 1. Map of Everest and surrounding area.

glacier and noticed that whenever a narrow 6-inch-wide crevasse was crossed there seemed to be claw marks in the snow at the end of the toe imprints. Finally we left the glacier and the line of footprints and got onto an increasingly grassy lateral moraine. We followed this for an hour or two, passing many wild goats until we found a suitable campsite. From here we carried out an extensive exploration of the Menlung Basin and identified a peak higher than Gaurisankar, which we called Menlungtse (*Tse* means *a peak*). Two days later we were joined by Murray and Bourdillon, who, after visiting the Nangpa La, a 20 000-foot glacier pass between Nepal and Tibet used throughout the year except for the winter months, had followed our route into the Menlung Basin. All tracks had been deformed by the sun and wind.

In the meantime we had asked our Sherpa, Sen Tensing, about the footprints. He had traveled with Shipton on many expeditions to Everest, the Karakoram, and elsewhere in the Himalaya and had no doubt that these prints belonged to the Yeti, of which there were two types: a Yak-eating and a man-eating, the latter of which had smaller tracks. He described the Yeti as walking on two legs and standing about 5 feet high and covered with brown hair; they had a high forehead and a face like that of a man. When pressed, he said that he himself had never seen a Yeti. As we spoke to him in Urdu, when we reached Kathmandu he was questioned again in his own Sherpa language, and he told exactly the same story.

On our return to the United Kingdom we were amazed to find that these footprints had aroused great interest and much speculation. I saw *The Times* photographs of them for the first time at a paper sellers pitch under Black Friars Bridge in London, where I often still buy an evening paper.

Discussion

In 1925 N.A. Tombazi, during an expedition to the Sikkim Himalaya, made the first European sighting of a Yeti. He was called from his tent by cries from his porters. "I soon saw the object almost two or three hundred yards down the slope. Certainly the outline of the figure was exactly like a human being. It walked upright and bent down occasionally to uproot a few rhododendrons. It looked dark against the snow and wore no clothes. Within a moment or so it had moved on to disappear in the undergrowth. I examined the footprints which in shape were like those of a man but only about 5 inches long. The five toes and the arch were distinctly recognisable, and the imprints were certainly those of a biped. I made enquiries later and ascertained that no-one had been in the neighbourhood since the beginning of the year" [3].

After this sighting there have been innumerable descriptions of unusual footprints found in the snows of the Himalaya and elsewhere; and bear tracks and bears have been seen, sometimes attacking Tibetan shepherds and yaks [4]. Vegetation can be found under the snow at great altitude, and yaks dig to find grass and roots. Animals also make excursions onto high snow fields. On the Silver Hut Expedition 1960–1961, which wintered at 19 000 feet in the Everest region, I saw what was probably a wolf crossing a pass of about 20 000 feet from one valley to another, and I have also seen a snow leopard and goats above the snow line. However, mountaineers have also seen unexplained tracks in extremely remote and inaccessible (except to mountaineers) places such as the snow lake in the Karakoram, which is many miles from vegetation or habitation [5].

The discovery of these tracks in 1951 stimulated great interest in the Yeti, and there have been many expeditions of varying competence in the Himalaya and central Asia. None has been successful in that no skeleton, carcass, bones, hide, or feces have been found [6–8]. Inevitably because of these negative findings it has been suggested that the footprints that Shipton and I found in the Menlung Basin were a hoax [9], and it is implied that Shipton wrote the account as he was bitter following his dismissal from the leadership of the 1953 expedition. This ignores the fact that his description of

Fig. 2. Footprint with boot for comparison.

the footprints was made a year before this event. However, there was no hoax, and the events occurred exactly as described by Shipton in his book *The Mount Everest Reconnaissance Expedition 1951* and by myself in this article.

There must therefore be some reasonable explanation for the Menlung footprints. Although it is possible that they could have belonged to a bear, the possibility that they were human has never seriously been considered.

The Menlung Basin, although remote and unvisited by Europeans prior to 1951, was only a few hours away from a small village in the Rongshar Gorge, along which there is a path, which we followed in 1951, connecting Nepal and Tibet. In addition there was a well-marked path leading from the gorge into the basin. It is more than likely therefore that, although we did not see them, the basin was used for yak herding, and Sherpas would go there.

The inhabitants of the Himalaya and Tibet can and do walk barefoot in the snow for long periods without frostbite. In 1951 neither Shipton nor I realized this; but since then I have observed this phenomenon in the highlanders of Bhutan and elsewhere (Fig. 3). Scientific confirmation came in January 1961 during the Silver Hut Expedition to the Everest region, of which I was a member. A Nepalese pilgrim, Man Bahadur, 35 years old, normally lived at 6000 feet in Nepal but visited our research sites and lived for 14 days at 15 300 feet and above. Throughout this period he wore neither shoes nor gloves and walked in the snow and on rocks in bare feet, without any evidence of cold injury. His clothing consisted of thin cotton trousers and jacket, a thin wool vest, cotton shirt, a thin sleeveless wool pullover and turban, and a khaki overcoat. He had no sleeping or protective equipment.

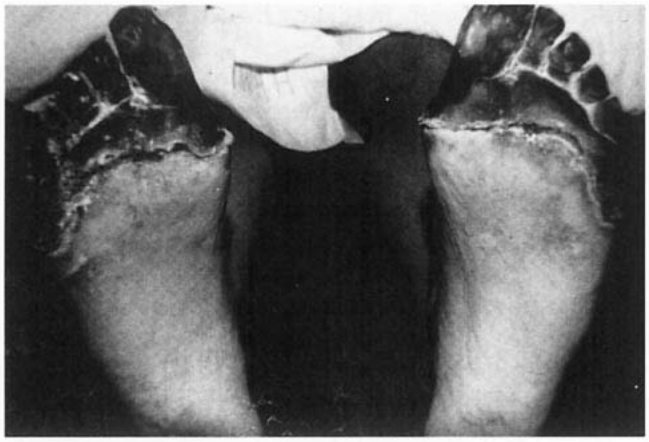

Fig. 4. Frostbite.

Initially he spent 4 days, including a storm, without shelter between 16 500 and 17 500 feet. The minimum night temperature was between −13°C and −15°C, with day temperatures below freezing. He also claimed to have slept soundly outside in the snow, covered only by his coat, and this was later confirmed under experimental conditions by observers. Various investigations confirmed that he had a relatively high metabolic rate without visibly shivering and could keep his extremities warm. With further cooling he would experience continuous light shivering compared with the normal intermittent violent shivering of the non–cold-tolerant. Eventually he developed deep fissures in his toes as a result of drying and splitting of the epidermis, which became infected. Because of this he returned home to his village in a warmer climate and at lower altitude [10].

Some years later an investigation of Buddhist practitioners of G-Tum-Mo Yoga by Benson et al. [11] confirmed that by previous meditation over some years it was possible to "warm without fire." This form of yoga was described by David-Neel [12] as a form of competition to find out how many sheets soaked in icy water could be dried overnight by Neophytes sitting naked in the open air. Under experimental conditions it was shown that these practitioners had the capacity to raise the temperatures of their fingers and toes by as much as 8.3°C. If an non–cold-tolerant person tried to follow the example of these individuals and walked in the snow with insufficient clothing for any length of time he

would become severely frostbitten, hypothermic, and would possibly die (Fig. 4).

The majority of descriptions of Yeti footprints have been made by laymen and anthropologists who have assumed that the prints were made by normal feet. None has suggested that the feet could be abnormal. However, in primitive communities many miles from even the most basic medical facilities and totally out of reach of any surgery, any abnormality would remain from birth onward.

Abnormally shaped prints could be the result of congenital or acquired hypertrophy of a toe or toes, and part or the whole of the foot may be affected. Polydactyly occurs in 49 cases out of 100 000 births, and fusion of one or more toes is reported [13]. Different types of deformities due to club foot are described, and I have seen a Himalayan highlander living at 14 000 feet with a bilateral varus deformity of the big toe which made it impossible for him to wear footgear. When walking in the snow he left a most bizarre print (Fig. 5). In addition, abnormally shaped feet may occur as a result of chronic infections such as leprosy, which is reported in Himalayan populations [14]. Finally, as Napier [8] suggests, abnormal prints may result from one print being superimposed on another.

The claw marks we observed in the Menlung could be explained by the presence of onychogryphosis or ramshorn nail. Although commoner in the big toe when the deformed nail may curve around and puncture the skin of the flexor aspect, it can occur in any of the toenails, and some deformed nails stick out like claws. This is probably the result of recurrent minor trauma and infection in unhygenic conditions. Treatment is by removal under anesthetic—a facility not available in remote Himalayan valleys. Also, the native foot is much more mobile than the European, and Sherpa porters can and do spread and dig their toes into the ground in a way not possible for Europeans whose foot is less flexible from the wearing of shoes.

Fig. 5. Deformed toes.

Summary

The attribution by some people of the footprints seen by Shipton and myself in a remote Himalayan valley on the Everest 1951 Expedition to a Yeti seems untenable, as many years of investigation have revealed no evidence of any such animal. A more likely explanation is that they were those of a local inhabitant with cold-tolerant feet and possibly some congenital or acquired abnormality or foot infection. The possibility that they were formed by overlapping prints must be considered. Other possibilities are that the prints are those of a brown bear or Langur monkey, but no tail marks were seen. It is doubtful if this puzzle will ever be solved.

References

1. Shipton, E.E. *The Mount Everest Reconnaissance Expedition 1951.* London: Hodder and Stoughton, 1952.
2. Pugh, L.G.C.E. *Report on the British Himlayan Expedition to Cho Oyu.* London: Medical Research Council, 1952.
3. Tombazi, N.A. *Account of a Photographic Expedition to the Southern Glaciers of Kanchenjunga in the Sikkim Himalaya.* Bombay: Maxwell Press, 1925.
4. Pranavananda, S. The abominable snowman. *Alpine J* 1956–1957; **61,** 110–118.
5. Russell, R.S. The Karakorum expedition 1939. *Alpine J* 1941; **52,** 195–208.
6. Tchernine, O. *The Snowman and Company.* London: R. Hale, 1961.
7. Hillary, E.P. *High in the Thin Cold Air.* New York: Doubleday, 1962.
8. Napier, J. *Big Foot: The Yeti and Sasquatch in Myth and Reality. London:* J. Cape, 1972.
9. Gillman, P. The most abominable hoaxer? *Sunday Times Magazine* 10 December 1989.
10. Pugh, L.G.C.E. Tolerance to extreme cold at altitude in a Nepalese pilgrim. *J Appl Physiol* 1963; **18,** 1234–1238.
11. Benson, H., Lehmann, J.W., Malhotra, M.S., Goldman, R.F., Hopkins, J., Epstein, M.D. Body temperature changes during the practice of G. Tum-Mo Yoga. *Nature* 1982; **295,** 234–236.
12. David-Neel, A. *With Mystics and Magicians in Tibet.* John Lane. London: Bodley Head, 1931.
13. Helal, B., Wilson, D. *The Foot.* 2 Vols. London: Churchill Livingstone, 1988.
14. Ward, M., Jackson, F. Medicine in Bhutan. *Lancet* 1965; **1,** 811–813.